In the Claims

Claim 1 (original): A method of forming a particle-containing material over a semiconductor substrate, comprising:

forming first particles across at least a portion of a surface of the semiconductor substrate;

forming a monolayer over the particles;

forming second particles over the monolayer; and

wherein the first particles, second particles and monolayer are comprised by the particle-containing material.

Claim 2 (original): The method of claim 1 wherein the monolayer is a first monolayer, further comprising forming a second monolayer over the second particles; and wherein the second monolayer is comprised by the particle-containing material.

Claim 3 (original): The method of claim 1 wherein the first particles have an average maximum dimension of from about 100Å to about 10,000Å; and wherein the second particles also have an average maximum dimension of from about 100Å to about 10,000Å.

Claim 4 (original): The method of claim 1 wherein the monolayer is formed from a precursor comprising a halogenated silane.

PAGE 4/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-28

Claim 5 (original): The method of claim 1 wherein the monolayer is formed from dichlorosilane.

Claim 6 (original): The method of claim 1 wherein:

the monolayer is formed from dichlorosilane; and

the first and second particles comprise one or more of amorphous carbon, silicon-carbon-oxygen and SiO_2.

Claim 7 (original): The method of claim 6 wherein the first and second particles comprise SiO_2.

Claim 8 (original): The method of claim 6 wherein the first and second particles comprise silicon-carbon-oxygen.

Claim 9 (original): The method of claim 6 wherein the first and second particles comprise amorphous carbon.

Claim 10 (original): The method of claim 1 wherein the particle-containing material is electrically insulative.

Claim 11 (original): The method of claim 1 wherein the particle-containing material is a low-K dielectric material.

PAGE 5/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claim 12 (original): The method of claim 1 wherein the particle-containing material is electrically conductive.

Claim 13 (original): The method of claim 1 wherein the particle-containing material comprises a catalytic surface containing platinum.

Claim 14 (original): The method of claim 1 wherein the particle-containing material comprises photoluminescent or electroluminescent particles.

Claim 15 (original): The method of claim 1 at least some of the first and second particles are carbon nanotubes.

Claim 16 (original): A method of forming a particle-impregnated material over a semiconductor substrate, comprising:

forming a first monolayer across at least a portion of a surface of the semiconductor substrate;

adhering particles to the first monolayer;

forming a second monolayer over the particles; and

wherein the particles and at least components from the first and second monolayers are comprised by the particle-impregnated material.

Claim 17 (original): The method of claim 16 wherein the particles have an average maximum dimension of from about 100Å to about 10,000Å.

PAGE 6/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claim 18 (original): The method of claim 16 wherein the first monolayer is formed from a precursor comprising a halogenated silane.

Claim 19 (original): The method of claim 16 wherein the first monolayer is formed from dichlorosilane.

Claim 20 (original): The method of claim 16 wherein:

the first monolayer is formed from dichlorosilane;

the particles comprise one or more of amorphous carbon, silicon-carbon-oxygen and SiO_2; and

the second monolayer is formed from dichlorosilane.

Claim 21 (original): The method of claim 20 wherein the particles comprise SiO_2.

Claim 22 (original): The method of claim 20 wherein the particles comprise silicon-carbon-oxygen.

Claim 23 (original): The method of claim 20 wherein the particles comprise amorphous carbon.

PAGE 7/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claim 24 (original): The method of claim 20 further comprising exposing the second monolayer to an oxygen-containing reactant to form SiO_2 from at least some of the second monolayer.

Claim 25 (original): The method of claim 24 wherein the oxygen-containing reactant is water.

Claim 26 (original): The method of claim 16 wherein the particle-impregnated material is electrically insulative.

Claim 27 (original): The method of claim 16 wherein the particle-impregnated material is a low-K dielectric material.

Claim 28 (original): The method of claim 16 wherein the particle-impregnated material is electrically conductive.

Claim 29 (original): The method of claim 16 wherein the particle-impregnated material comprises a catalytic surface containing platinum.

Claim 30 (original): The method of claim 16 wherein the particle-impregnated material comprises photoluminescent or electroluminescent particles.

PAGE 8/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claim 31 (original): The method of claim 16 at least some of the particles are carbon nanotubes.

Claim 32 (original): A method of forming a particle-impregnated conductive material over a semiconductor substrate, comprising:

spreading particles over the semiconductor substrate;

forming a monolayer over the particles; and

wherein the conductive layer and particles together are at least part of the particle-impregnated conductive material.

Claim 33 (original): The method of claim 32 wherein the particles are electrically conductive.

Claim 34 (original): The method of claim 32 wherein the monolayer is electrically conductive.

Claim 35 (original): The method of claim 32 wherein the monolayer is electrically conductive, and wherein the particles are electrically conductive.

Claim 36 (original): The method of claim 32 wherein the particles comprise carbon nanotubes.

PAGE 9/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claim 37 (original): The method of claim 32 wherein the particles comprise photoluminescent or electroluminescent materials.

Claim 38 (original): The method of claim 32 wherein the particle-impregnated conductive material is catalytic platinum.

Claim 39 (original): The method of claim 32 wherein the particles comprise tungsten.

Claim 40 (original): The method of claim 39 wherein the monolayer comprises tungsten.

Claim 41 (original): The method of claim 40 wherein the particle-impregnated conductive material comprises tungsten silicide.

Claim 42 (original): The method of claim 39 wherein the monolayer comprises tantalum.

Claim 43 (original): The method of claim 42 wherein the particle-impregnated conductive material comprises tantalum nitride.

Claim 44 (original): The method of claim 32 wherein the particles have an average maximum dimension of from about 100Å to about 10,000Å.

PAGE 10/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claim 45 (original): The method of claim 32 wherein the monolayer comprises tungsten.

Claim 46 (original): The method of claim 32 wherein the monolayer comprises tungsten, wherein the particle-impregnated conductive material comprises tungsten silicide, and further comprising exposing the at least some of tungsten of the monolayer to silane to incorporate at least some of the tungsten into the tungsten silicide.

Claim 47 (original): The method of claim 46 wherein the monolayer is formed from WF_6.

Claim 48 (original): The method of claim 32 wherein the monolayer comprises tantalum.

Claim 49 (original): The method of claim 32 wherein the monolayer comprises tantalum, wherein the particle-impregnated conductive material comprises tantalum nitride, and further comprising exposing at least some of the tantalum of the monolayer to NH_3 to incorporate at least some of the tantalum into the tantalum nitride.

Claim 50 (original): The method of claim 49 wherein the monolayer is formed from TaF_5.

PAGE 11/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26

Claims 51-60 (canceled).

PAGE 12/13 * RCVD AT 3/31/2006 3:07:20 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:5098383424 * DURATION (mm-ss):03-26